Presented at the ICEAA 2024 Professional Development & Training Workshop - www.iceaaonline.com/min2024

QUANTECH services, inc
{The Sum of Quality}

A Series of Unfortunate Slides

How Not to Give a Briefing

Shannon Cardoza, Cost Estimator Associate (SSC/SZYO)
James Monopoli Jr, Cost Technical/Task Lead (SSC/SZQF)
Quantech Services, Inc.
May 2024

Agenda

- Why We Care
- Horror Stories from the Acquisition Community
- Program Executive Officer (PEO) Decision Brief – Attempt #1
- PEO Decision Brief – Attempt #2
- Wrap Up / Conclusion

Effective Presentations… Why Should We Care?

35 Million

PowerPoint presentations estimated to be given every day

– Forbes

46% of presenters

take more than 8 hours to design their presentations

– Visme.com

70% of employees

believe presentation skills are critical to their success at work

– Forbes

45% of presenters

find it challenging to design effective presentation layouts

– Beautiful.ai

Even the best data in the world is useless if you can't communicate the story to your audience!

Presentation Horror Stories

"Mispronouncing the Colonel's name so many times that it started to hurt his ears so much he stopped me so he could help me pronounce it properly. **Brutal."**

"The PEO asked for a schedule risk analysis of the Program Integrated Master Schedule (IMS). **The program was 3 months late and only showed a completely unreadable Gantt chart via Zoom which looked like 4pt font."**

"Contracting officer told the Program Office team that their Statement of Work (SOW) for an effort was the worst they had seen in 30 years of contracting **with the PEO online"**

"A Program Manager did not communicate to the team that each function would be briefing their respective slides to leadership. I was caught off guard when asked to present my slides, **especially when I wasn't ready to turn my camera on…"**

"The worst Acquisition Strategy I've seen was a Performance Work Statement (PWS) so vague that no one knew what it was actually for! **Further investigation deemed it was Sustainment of an obsolete application."**

"I can't tell you how many times I've gotten to a presentation and the person sharing the slides doesn't have the most up-to-date slide, **or they just disregarded any updated information sent after the initial cost estimate."**

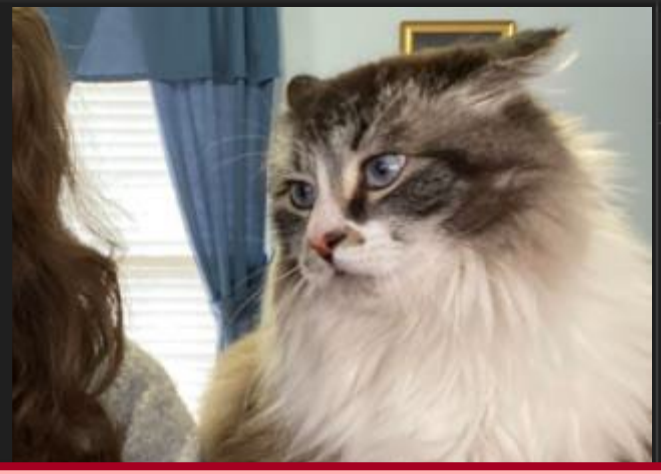
Shannon Cardoza, Cost Analyst
May 2024

Attempt #1 - Cost Estimate Briefing to PEO (and staff) as part of Acquisition Strategy Decision Meeting – PEO asked to approve Request for Proposal (RFP) Release

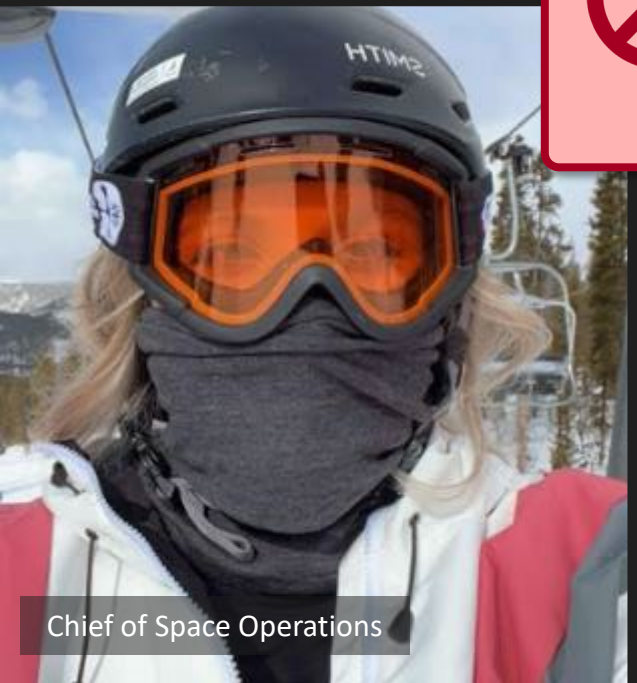
00:25

Chat People Raise React View Rooms Apps More Camera Mic Share Leave


Chief Knowledge Officer



Presentation Folly:
Program IPT Members are Unprepared, PEO Staff Members Needed for Decision Not Invited or Present


Chief of Space Operations


Director of Community of Engagement


Program Executive Officer

Participants

Invite someone or dial a number

Share invite

▼ Not in this meeting (20)

- Lead Engineer
- Life Cycle Support Manager
- Program Lead
- Product Support Manager
- Budget Analyst
- Cost Chief
- Chief Financial Officer
- Integration Lead
- Senior Materiel Lead

Estimate Background/Scope

- SCOPE:
  - LABOR, MATERIALS, TRAVEL, AND OTHER DIRECT COSTS (ODCS) FOR THE EFFORT BETTER LINGUISTIC UNDERSTANDING OF BALEEN-BASED ENVIRONMENTAL RESOURCES (BLUBBER)

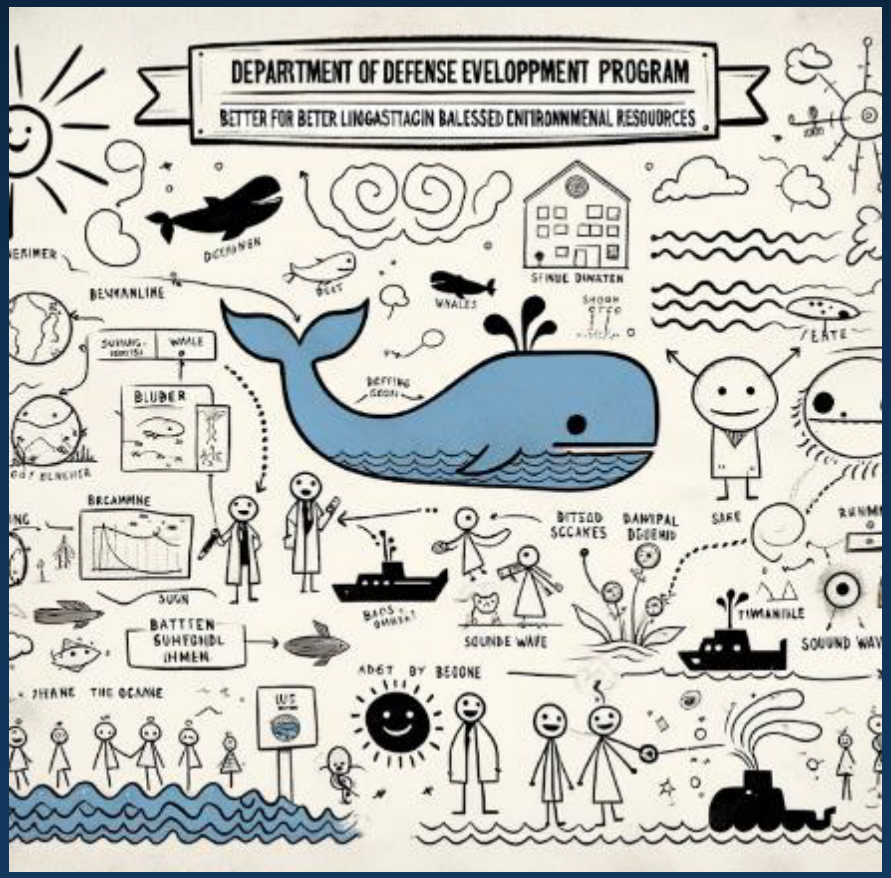
- **Background:**
  - Mid 1990s – Idea for Whale Noise Communication network is initially conceptualized, but is immediately nixed following the success of Free Willy
  - Sep 2021 – Program was revitalized and slated for development
  - Oct 2021 - I was hired
  - Nov 2022 – Program was
  - Dec 2022 – Program was
  - Feb 2023– Program was
  - August 2023– Program wa
  - 28 Sep 2023 – We though
  - 29 Sep 2023 – We were i
  - Present Day – Program Es

L)

Presentation Folly:
Font Sizes / Professionalism
No traceability to decision or requirements

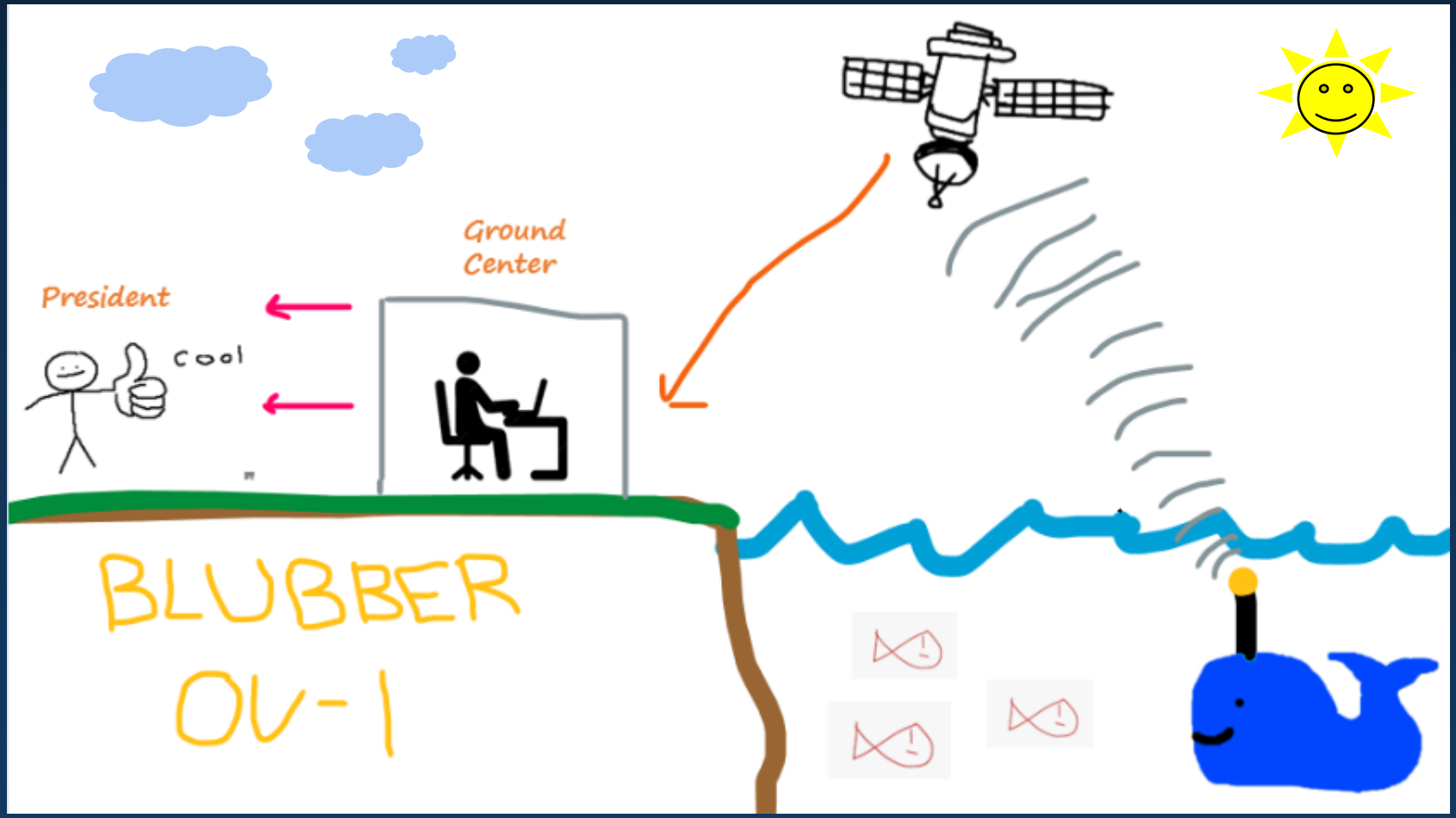
- Estimate History:
  - 2021 – 55 Request for Information (RFI) responses received
    - Initial estimate developed in the form of the Prime Contractor Proposal being delivered to the Program Objective Memorandum (POM) team
  - 2022 – Summer intern who was told this would be an accounting job updates estimate
  - 2023 – Estimate updated discretely while other programs were presenting during the annual review

High-Level Operational View Point (OV-1) for BLUBBER



- *Operational View – generated by EN and PM by ChatGPT in the hours before the briefing because it was forgotten from the template*
- *Program office whipped up some alternative views that could be cooler for program marketing and posts on LinkedIn - we believe our ROM estimate adequately covers cost in all scenarios*

OV-1 for BLUBBER - Previous Version



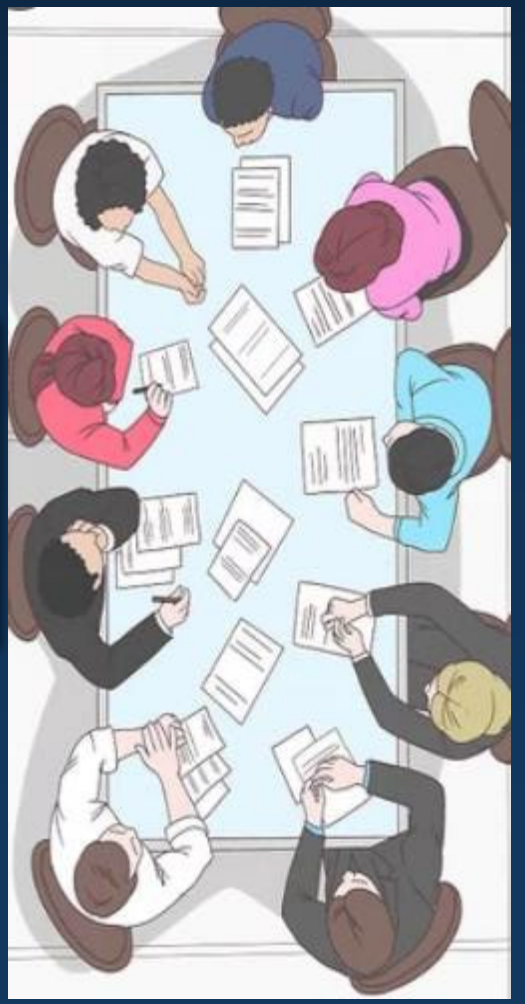
Updated OV-1 represents significant progress in program requirements definition and documentation

Key Programmatic Notes & Technical Assumptions

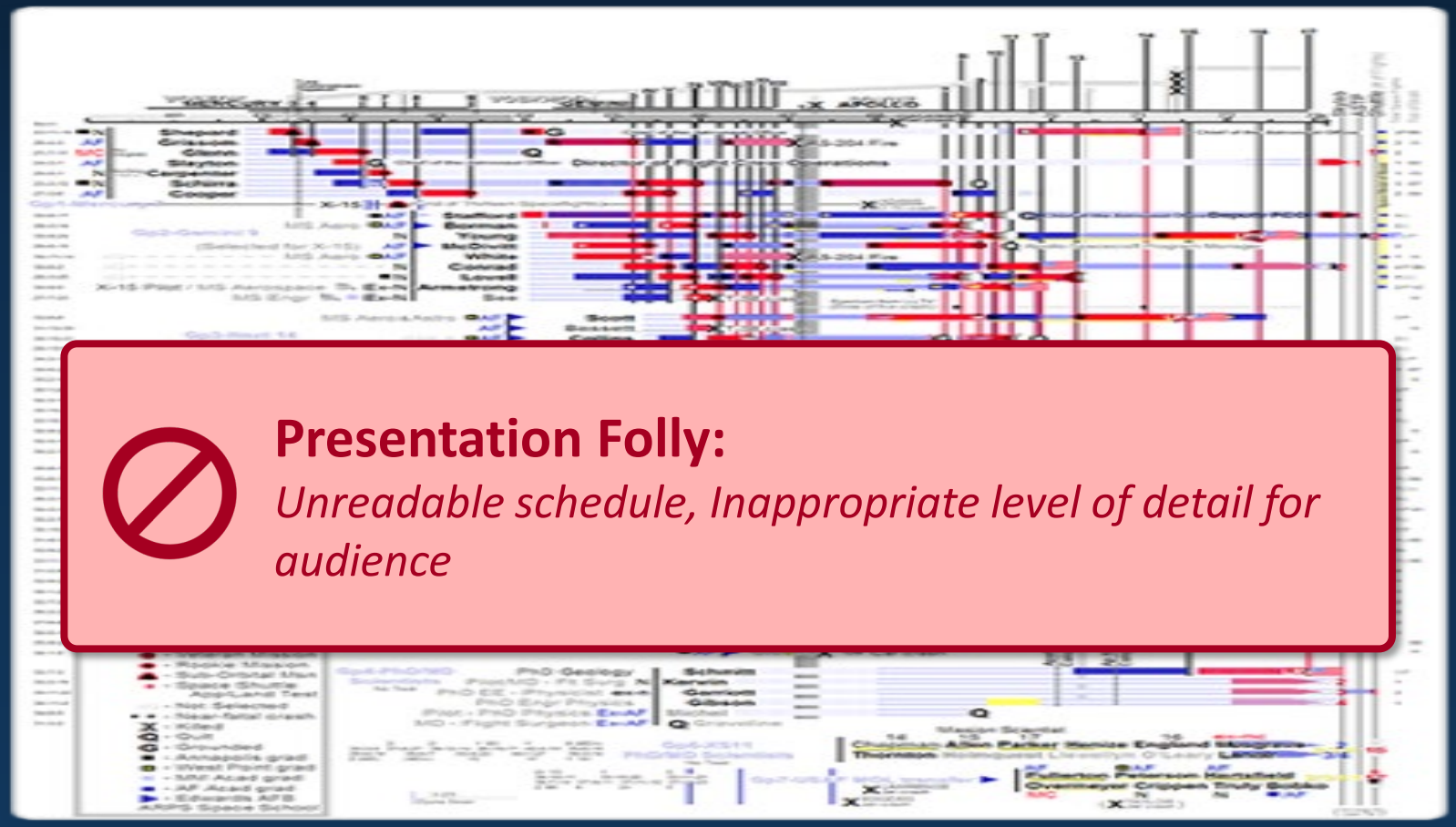
- **Overall Acquisition & Contracting Strategy**
  - We're at the forefront of streamlined modern acquisition and we won't incur the unnecessary costs of the past
  - Hope is a strategy
  - Send all money to someone else with a looser contracting approach and faster RFP release timelines
  - Schedule worked backwards from user need date, all we need is our best people to git'r done – vendors will be required to meet the schedule
  - Requirements will b
- **Hardware**
  - All HW is off the she
  - Sister program X wil
- **Software**
  - Using new SW langu
  - Heavy SW Re-Use, a
  - SW will automatically interface with various existing external systems
- **Systems Engineering & Program Management (SEPM) and Integration & Test (I&T)**
  - Was told "We don't need no SEPM"
  - Govt led Systems Engineering & Integration (SE&I) will reduce traditional SEPM levels by 75%
- **Criteria for Operational Acceptance**
  - Limited documentation prototype will be accepted by the user with no trg, help desk or doc in place
- **Will petition PEO for tax relief**

Presentation Folly:

Slide content - is there any way for the estimate to be successful?



Program Schedule



Presentation Folly:
Unreadable schedule, Inappropriate level of detail for audience

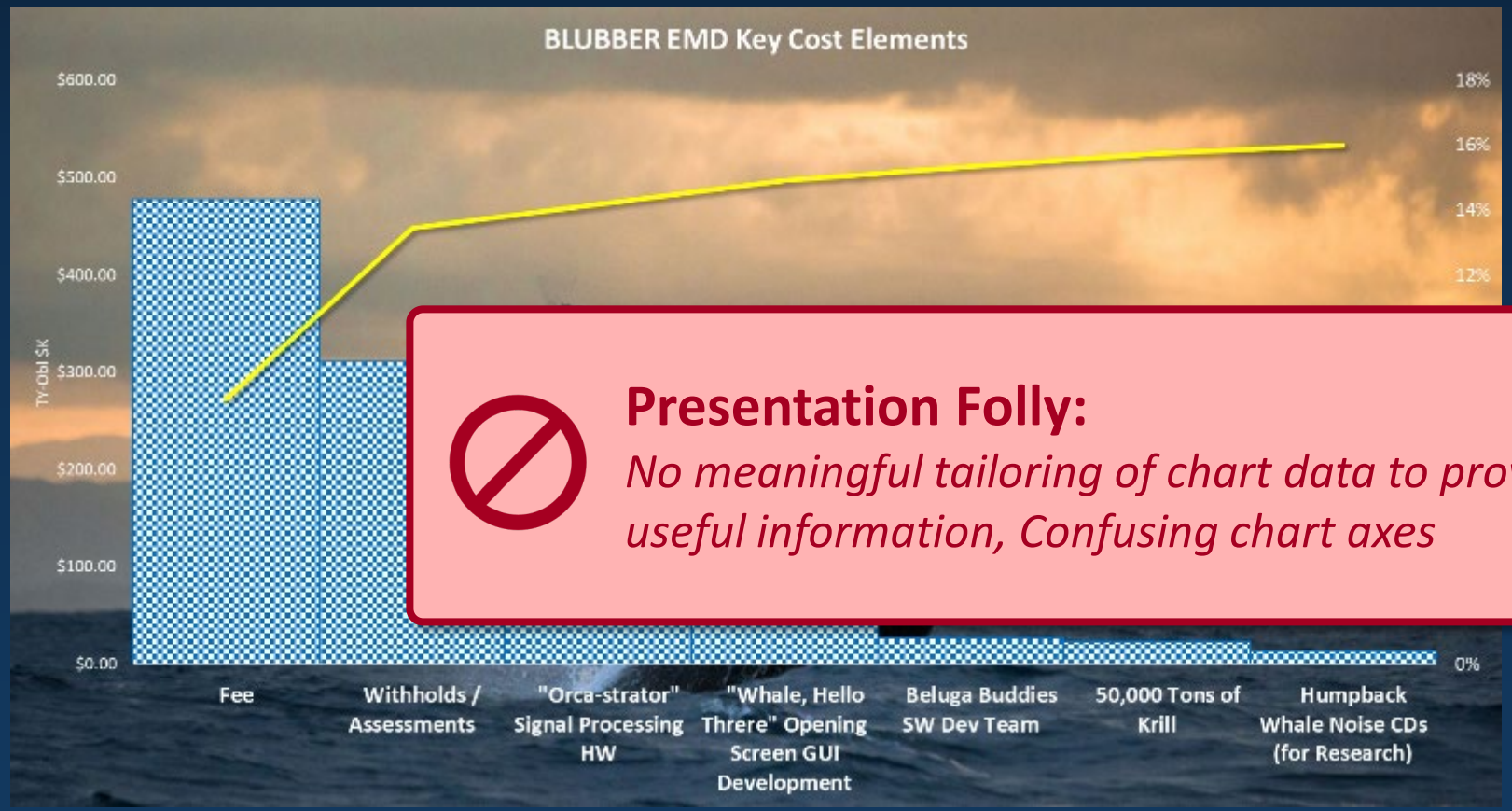
- ***Schedule is highly detailed and provides planned estimated times/dates at task level***
- ***Rest assured the program has a valid schedule (used the most detailed contractor schedule submitted as part of the RFI responses), although no firm technical baseline exists and no supporting analogous schedule data has been identified or analyzed at this time***

Methodology

Work Breakdown Structure (WBS)	Rationale
BLUBBER Engineering & Manufacturing Development (EMD)	
Contractor Costs	
Prime Mision Poduct	
Recuring (Hadw	eBay,Craiglist, and Facebook Marketplace search analysis for Servers, Firewalls, and Switches for significant cost savings potential
Installlllation an	e they installed a stereo in
Sorftware Deve	Contractor to ask how many
Other Contactor C	
Acuisition Suport (SEPM, Data)	0% since the program "Doesn't Need SEPM"
Larb Testing Intergation	N/A since all HW/SW will be Commercial Off the Shelf (COTS) so we can just plug'em in and go
Engineering Change Hors d'oeuvres (ECO)	N/A since the program 100% knows it has no unknown unknowns
Governemenement Cots	
Travel	Extensive comparitive analysis by airline, city, rental agency, etc. gathered into a comprehensive database - assuming one CONUS trips per year for one FTE
wITHOLDS/aSSESSMNETS	***Ask someone from Budget

Presentation Folly:
Inconsistent formatting, Poor choice of colors
Spelling Errors

Cost Drivers/Tornado



Presentation Folly:
No meaningful tailoring of chart data to provide useful information, Confusing chart axes

Key Cost Elements for BLUBBER EMD Phase*:

1. Fee
2. Withholds/Assessments
3. “Orca-strator” Signal
   cessing HW
   hale, Hello There”
   ening Screen GUI
   velopment
   uga Buddies SW Dev
   m
6. 50,000 Tons of Krill
7. Humpback Whale Noise CDs (for Research)

***Cost Contributors Pareto Chart analysis drills down to Level 15 of WBS for increased visibility**

Cost Track

Cost Comparison**	Prior Estimate	Current Estimate	Delta
Total BLUBBER To-Go Cost	$1,973,337,651.27	$681,217,751.51	-$1,292,119,899.76
Contractor Cost	$1,673,113,097.57	$589,124,330.13	-$1,083,988,767.44
Government			08,131,132.32

Presentation Folly:
Inappropriate level of detail, Over-use of banner
Inconsistent formatting

****Foot Notes:**

- Prior Estimate includes Procurement a
- Realignment of WBS items and chancin
- Future estimates will have a much more detailed cost track (provided the WBS items stay exactly the same from this year to the next review because that would be a lot of work)
- Summary of changes:
  - New Inflation indices received – using FY24 indices for RDT&E, prior estimate was still using the FY99 table which upon further consideration seemed to be outdated
  - Labor Rate updates – market research (ie information from a proposing contractor) indicated the rates in the previous estimate were too low and needed revision
  - New Material Quotes due to changing HW/SW requirements – prior estimate was utilizing quotes that were unknowingly sneaked from another IT program, it is uncertain if the specs are similar for the current program
  - Updated Risk Ranges and Analysis – previous estimate included only left skewed risk ranges, so risk ranges in current estimate represent a big improvement
  - New Schedule reducing Period of Performance from 20 to 6 Years (although previous estimate included PROC and O&M, so uncertain what the true schedule reduction was for EMD alone
  - Labor Hour Updates – prior estimate labor hours were largely guesses that were provided in the wee hours of the morning from a Program Manager who had not gotten enough sleep, we think they just asked ChatGPT for what a reasonable estimate would be to complete each task in the Statement of Work (SOW)
    - Labor hours include hours for Non-Recurring Engineering, Recurring Engineering, Software Development, and Systems Engineering/Program Management activities
  - Fee Updates – previous estimate did not include Fee since the program forgot about it. A contract type has not been fully agreed upon yet, though, so this will likely change again soon
  - Travel Rate Updates – extensive analysis performed to determine rates for current FY in addition to historical escalation research for best-estimates for future FY travel
  - Program office identified several additional areas that will require updates in future years in the days before this briefing, so all of this is basically subject to (and likely to) change, perhaps significantly
  - Estimate name and versioning was updated to reflect estimate name and versioning
  - Team descriptions were updated since a bunch of typos were identified to the point that it was almost entirely illegible and indiscernible what the responsibilities of each team actually were
  - Table formatting was changed because it wasn't "colorful enough"
  - Documentation updates (for some things – some things, we're not really sure)

Risk Analysis

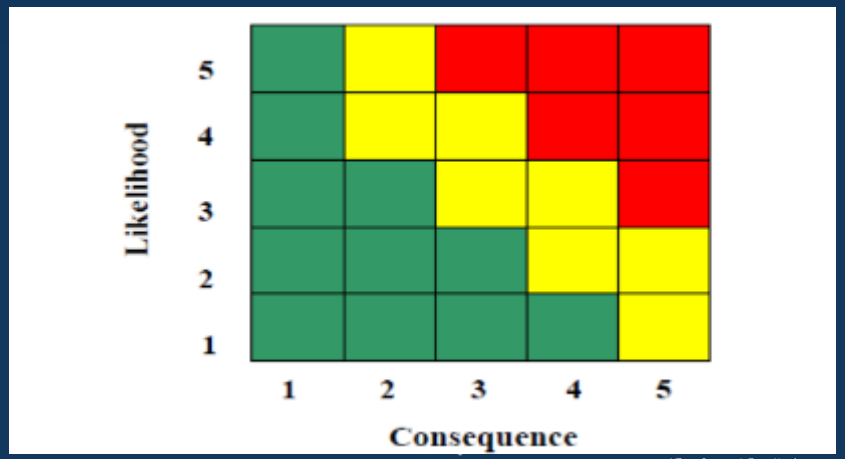
Risk Methodologies

- Labor Rates – LogNormal Medium Median (CV = 0.15, adds 3.18% risk dollars to the Point Estimate at the Mean) to account for uncertainty in Labor Rates
- Non-Recurring Engineering Labor Hours – LogNormal Medium Median (CV = 0.15, adds 3.18% risk dollars to the Point Estimate @ the Mean) to account for uncertainty in Non-Recurring Engineering Labor Hours
- Software Development Labor Hours – LogNormal Medium Median (CV = 0.15, 3.18% risk dollars to the Point Estimate @ the Mean) to account for uncertainty in Software Development Labor Hours
- Training Labor Hours– LogNormal Medium Median (CV = 0.15, adds 3.18% risk dollars to the Point Estimate @ the Mean) to account fo
- Material - LogNorma ate @ the Mean) to account for uncertai
- Travel – Beta with cu (CV = 0.183, adds 6.07% risk dollars to the Po
- Other Government C ollars to the Point Estimate @ the Mea

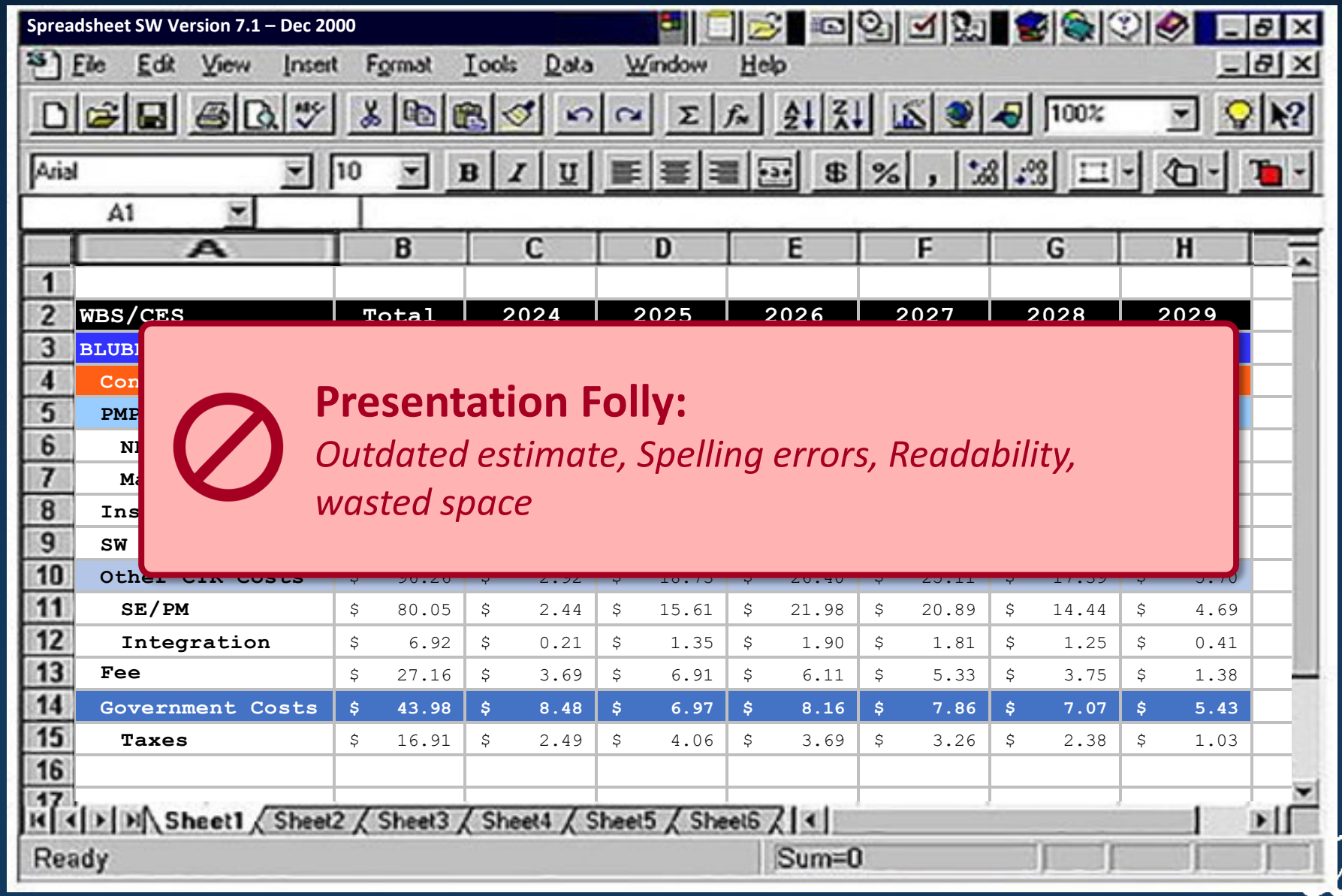
Presentation Folly:
Overload of words, details and technical jargon, inappropriate for audience

Risk Statistics

- Number of risk iterations ran: 10
- Probability Level (PL) at the Mean: 53%
- Coefficient of Variation (CV): 0.15
- Risk $ added to PE @ Mean: $95.76M (16.3% of PE)
- Simulation utilized: Monte Carlo Simulation
- Correlation Applied: IDK
- LogNormal Probability Density Function: $f_x = \frac{1}{x\sigma\sqrt{2\pi}} e^{-\frac{(\ln x-\mu)^2}{2\sigma^2}}$, $x > 0$

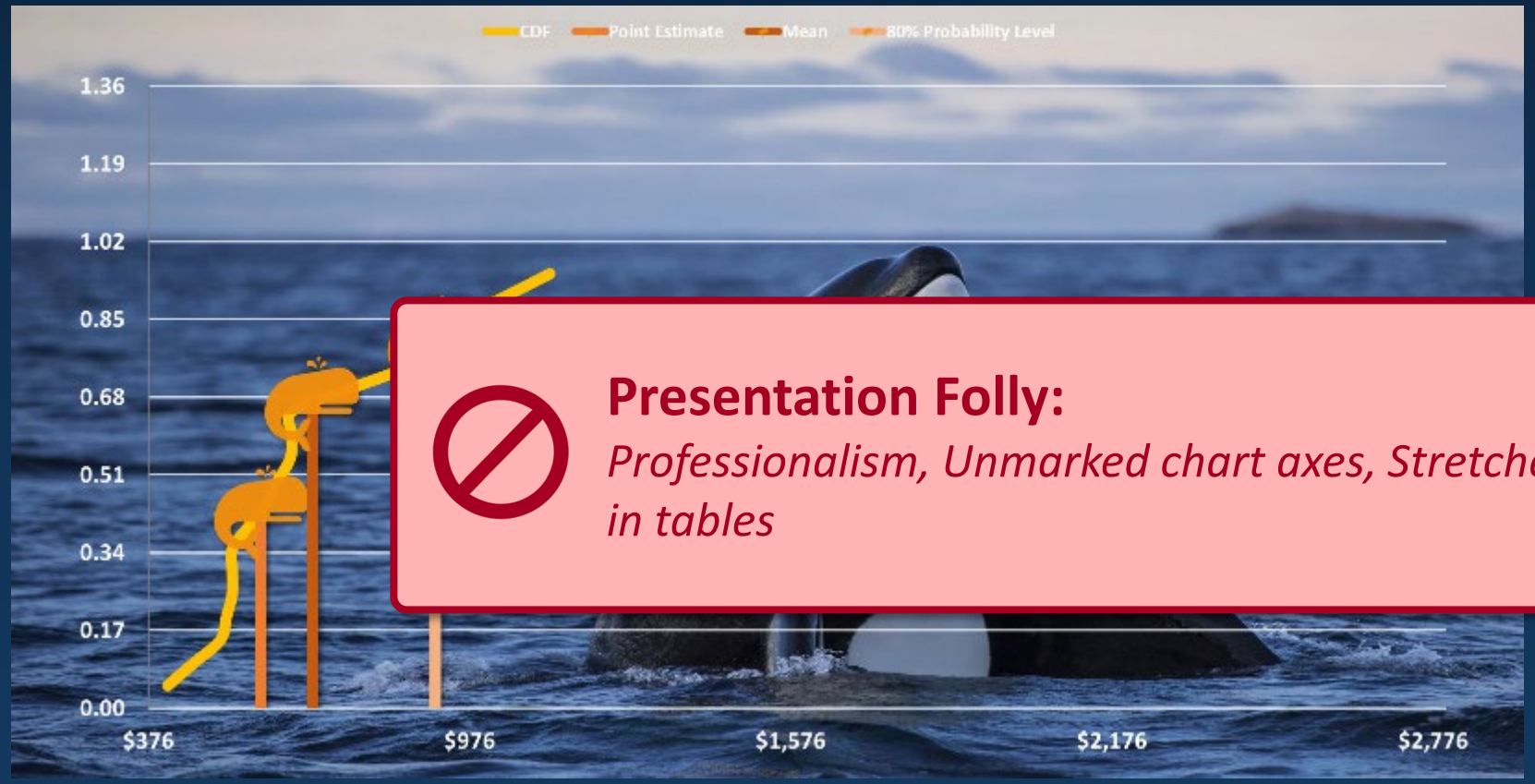


Estimate Results



Presentation Folly:

Outdated estimate, Spelling errors, Readability, wasted space



Presentation Folly:
Professionalism, Unmarked chart axes, Stretched text in tables

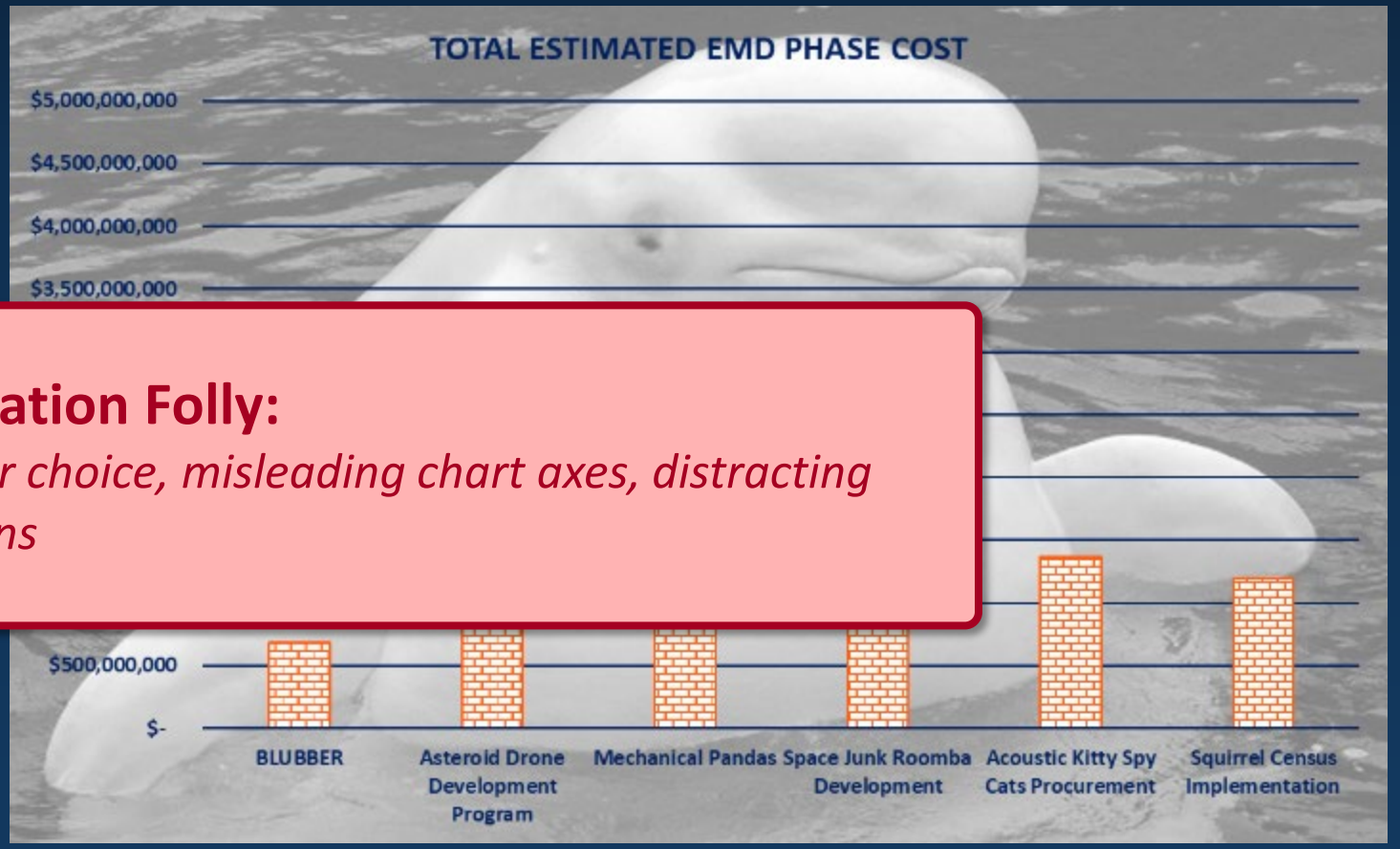
*Risk simulation run with 10 iterations

	Total Cost
	$586.48
	$682.24
80% Probability Level	$911.79

S-Curve

Reasonability Check

- **BLUBBER EMD Total Cost compared against 5 analogous programs**
  - Cost is slightly less but still in the ballpark, so estimate is reasonable
  - BLUBBER project team is actively taking steps to ensure they are at the forefront of streamlined modern acquisitions and won't incur the unnecessary costs of the past (ie no SW growth)
- **BLUBBER Team has also for potential cost saving**
  - System Documentation a compilations of emails ar transcriptions to avoid hi
  - Program will petition for
  - Sister programs that are with BLUBBER system wil portion plus a 20% markup
  - ***Contingency Plans:***
    - Recruit high schoolers in need of volunteer hours to graduate
    - Kickstarter/Crowdfund/GoFundMe
    - Hope for the best



Presentation Folly:
Poor color choice, misleading chart axes, distracting animations

Due to extensive cross-checks, BLUBBER Program Office recommends expedited estimate approval

Program Funding / Budget Availability

Presentation Folly:
Omitted Critical Content for Decision Makers

…Not included at this time. Enjoy this whale fact in the meantime

PM Recommendation to PEO

- **Program has:**
  - Synergistically synergized our requirement-scape, technologically based our baseline, schedulized our time-tabling, interconnected our interdependencies, and risk-managed our riskalicious endeavors
  - Passed the sniff test through our thinking outside the low hanging fruit, pushing the envelope onto the meat and potat[illegible] thinking caps, and circling back to [illegible]

- **Recommendations t[illegible]**
  - Finna approve t[illegible]m basic to boujee 💎 and make it [illegible] 🔥
    - It's giving sus rn 🕵️ 👀, kinda a red flag 🚩, no cap 🧢
  - Ship this LIT 🔥 estimate as FIRE 🥵 and SLAY 💅 the RFP – we understood the assignment 💯, it's totally bussin', period-t 👌

Presentation Folly:
Overuse of buzzwords and emojis, lack of professionalism and meaningful content

Questions/Comments

PEO Comments & Decision

- Grave concerns regarding the requirements definition for this program
- Was unable to read the schedule presented and to assess key durations/incremental milestones using my historical knowledge of similar programs in my portfolio
- Detect an unjustified sense of optimism regardi… use assumptions and wishing away…
- Was bludgeoned by risk a… regarding prediction…
- Cost drivers appear…

- **Recommendations:**
  - At a minimum, w… program management and… tractors on this project
  - I choose not to tak… d $1B cost delta to our stakeholders
  - Denial of Program Manager (PM) request to release RFP
  - I am going off the grid in Costa Rica for 2 months and we will try this again when I return with whoever the new PM and cost analysts are

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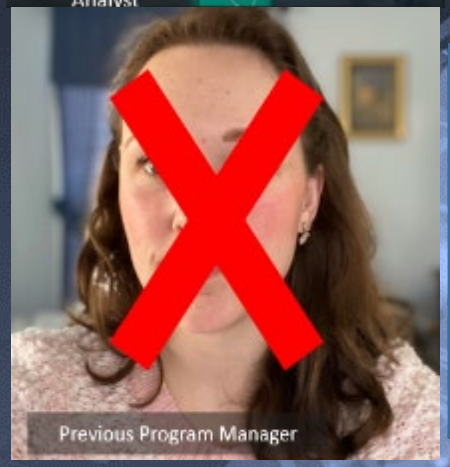


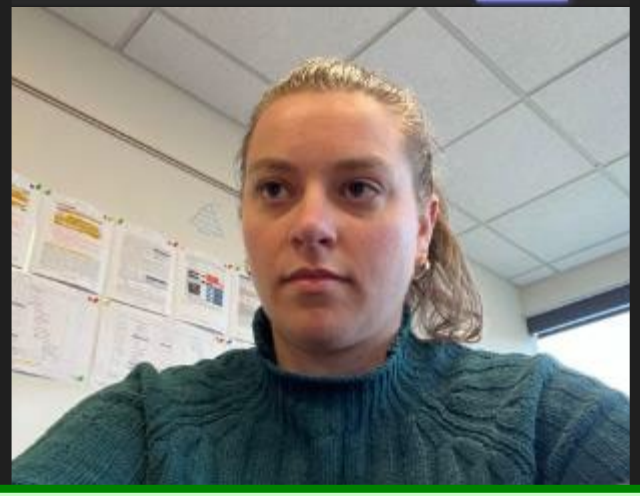
BLUBBER Cost Estimate Brief to PEO

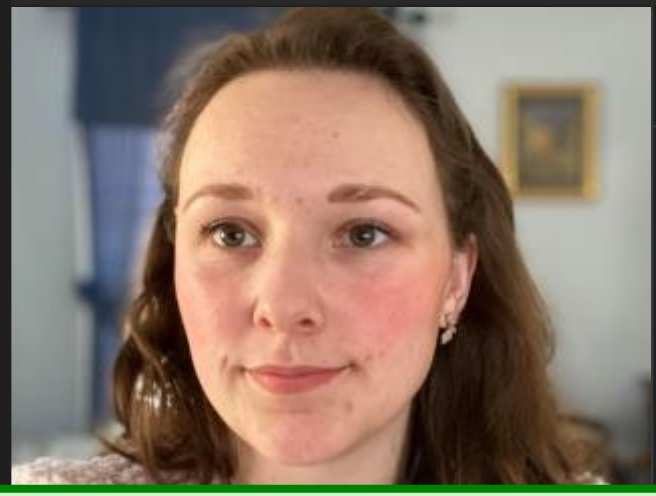
In support of RFP Release Decision

James Monopoli Jr, Cost Technical/Task Lead (SSC/SZQF)
Quantech Services, Inc.
May 2024

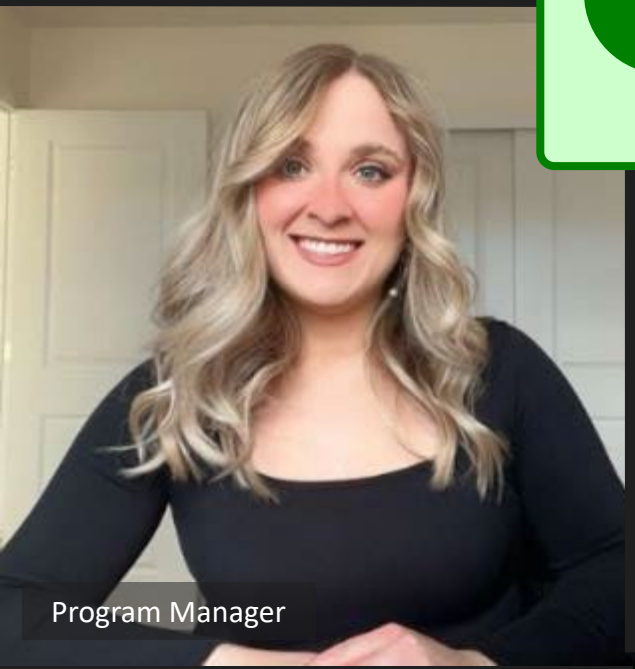
Attempt #2 - Cost Estimate Briefing to PEO (and staff) as part of Acquisition Strategy Decision Meeting – PEO asked to approve Request for Proposal (RFP) Release

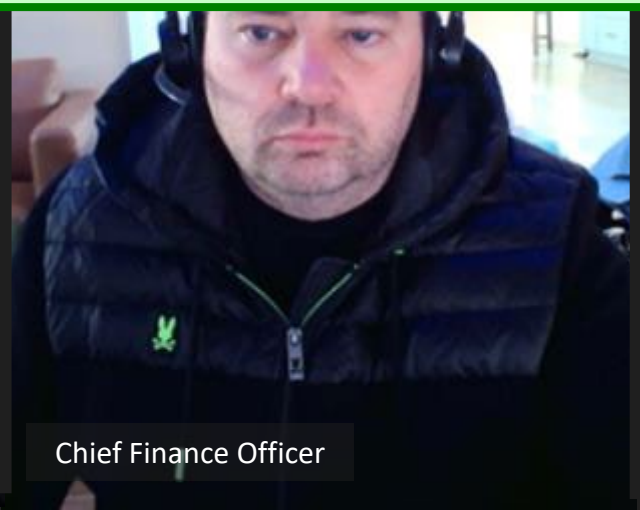
00:25 Chat People Raise React View Rooms Apps More Camera Mic Share Leave

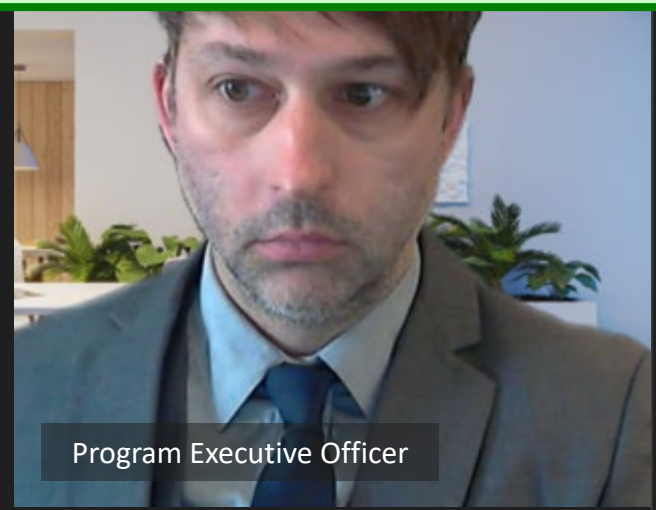




Presentation Success:
Correct Program IPT Members Present, Correct PEO Staff Members Present







Participants

Invite someone or dial a number

Share invite

▼ Not in this meeting (20)

- ☑ Senior Materiel Lead
- ☑ Life Cycle Support Manager
- ☑ Program Lead
- ☑ Product Support Manager
- ☑ Budget Analyst
- ☑ Deputy Cost Chief
- ☑ Finance Chief
- ☑ Sustainment Lead
- ☑ Integration Lead

BLUBBER - Program Overview / Estimate Scope

Scope:

Estimate for the development of Better Linguistic Understanding of Baleen-Based Environmental Resources (BLUBBER); a linguistic communication capability to baleen whales. Includes labor (Non-Recurring Engineering, Software Development, Acquisition Support, Training) Materials, Installation and Checkout, Lab Test/Integration, Trave and Other Direct Costs (ODCs) necessary to improve environmental monitoring and maritime defense

- Capability Gaps Addressed: Maritime Surveillance and Reconnaissance, Environmental Monitoring, Underwater Communicat[illegible] and Collaboration, Humanitaria[illegible]

Presentation Success:

Scope, Requirements and Decision Documents Properly Outlined

Background:

- Requirements Doc[illegible]
  - Aquatic AoA
  - WHALE-Talk
  - 1067-WHALE[illegible]
- April 2022 – Nov 2024: WHALE-TALK Risk Reduction Study by Contactor Aquatics Inc.
- August 2023 – Program was renamed from WHALE-TALK to BLUBBER
- March 2024 – Seeking PEO approval to leading into Milestone B (MSB) Source Selection

Estimate History:

- 2021 – Initial estimate developed as a Rough Order of Magnitude (ROM) due to end-of-year requirements approval, status communicated clearly and as early as possible with Program Objective Memorandum (POM) team to ensure there were no surprises
- 2022 – Integrated Product Team (IPT) coordinates full deep dive and estimate overhaul to improve fidelity for FY24 POM cycle, which is received positively by the division Cost Chief and Chief Finance Officer
- 2023 – Estimate is further refined to incorporate updated schedule, requirements, and data sources

QUANTECH services, inc. (The Sum of Quality)

BLUBBER - High-Level Operational View Point (OV-1)

Presentation Success:

Singular OV-1 vetted with stakeholders and user community

Key mission: leverage unique, natural communication of whales to bolster defense initiatives, enhance maritime security, and safeguard critical oceanic assets

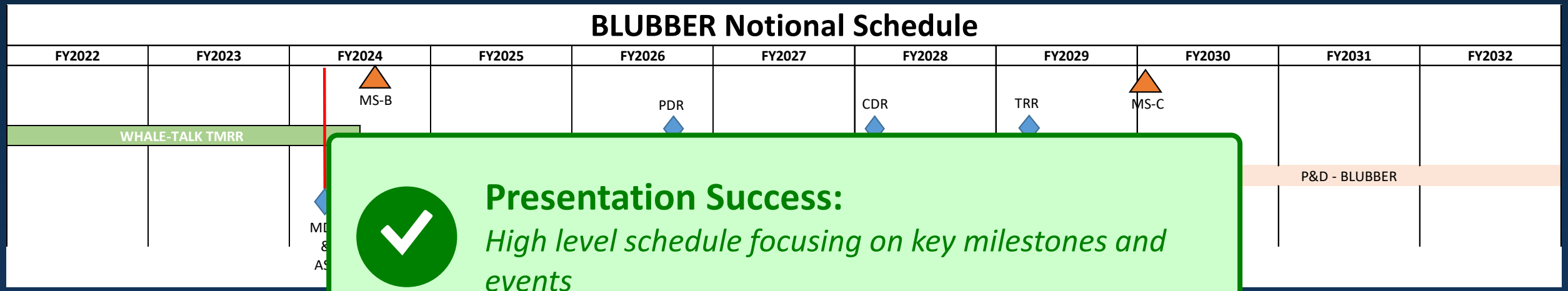
Key Programmatic Notes & Technical Assumptions

- **Overall Acquisition & Contracting Strategy**
  - Requirements Document worked with key stakeholders, defining key requirements for Minimum Viable Product (MVP), Initial Operational Capability (IOC) and Full Operational Capability (FOC) levels
  - Schedule developed with insights from highly analogous programs
  - Key interdependencies and discrete risks identified
  - Clear requirements and success criteria relayed to potential vendors in RFP
- **Hardware**
  - Largely Commer
- **Software**
  - Significant comp
  - Many subsystem
  - Significant effort
- **Systems Engineering/Program Management (SEPM) and Installation & Test (I&T)**
  - Will find efficiencies and leverage modern acquisition practices where possible but planning on utilizing best practices for architecture, documentation and testing from recent successful DoD acquisition programs
- **Criteria for Operational Acceptance**
  - Strict criteria developed with user community – help desk, training must be in place for Operational Acceptance (OA)

ents

Presentation Success:
Realistic

BLUBBER - Notional Program Schedule



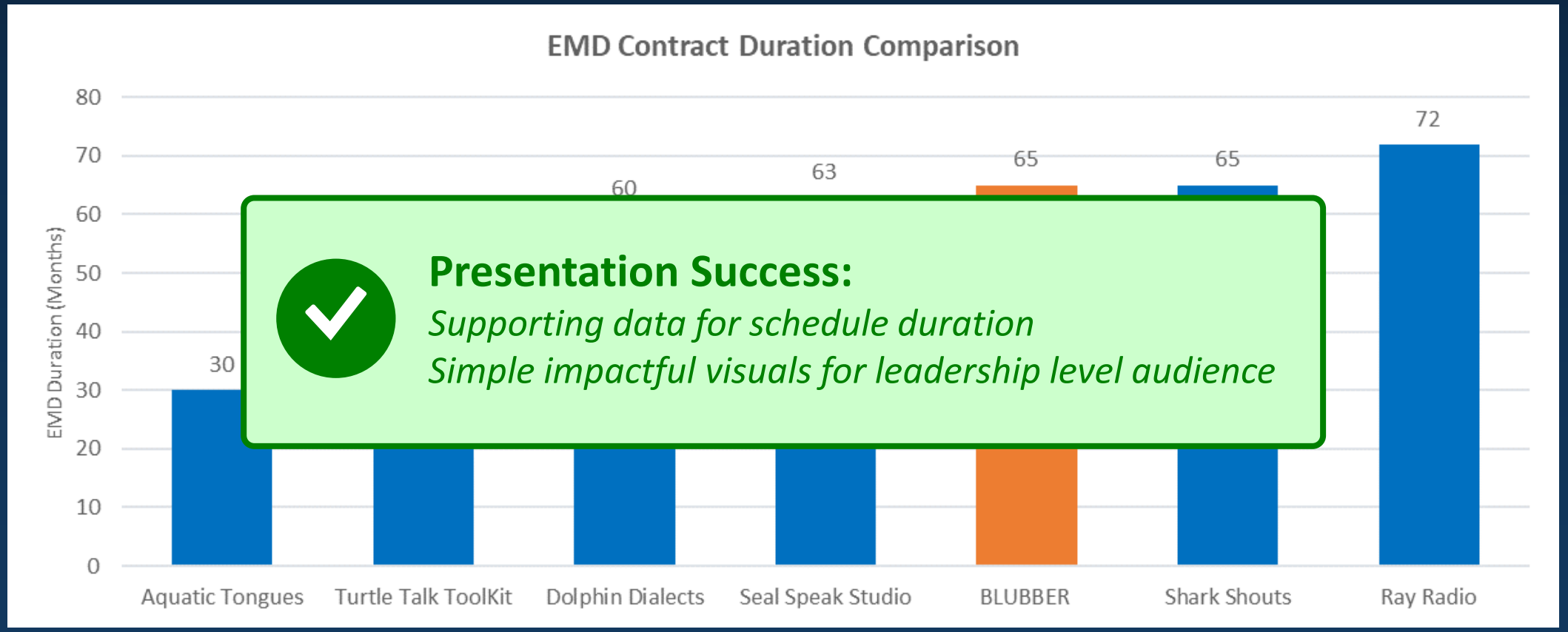
Presentation Success:

High level schedule focusing on key milestones and events

- *Projected Engineering & Manufacturing Development (EMD) duration for BLUBBER is 65 months - lengthy compared to standard EMD programs due to:*
  - *Challenging nuances of navigating global maritime laws and agreements*
  - *Complexity of developing/integrating Information Technology (IT) systems built to withstand harsh deep-sea environments*
  - *Historic demonstration of extensive coordination across multidisciplinary agencies to implement Oceanic programs*

Schedule current a/o May 2023 – detailed, task-level breakout updated and monitored during regular IPT meetings

BLUBBER - Reasonability Check: EMD Contract Duration Comparison



BLUBBER contract duration similar to oceanic IT/Communications programs, in line with trend of longer-than-average EMD cycles

BLUBBER - Methodology / Technical Baseline

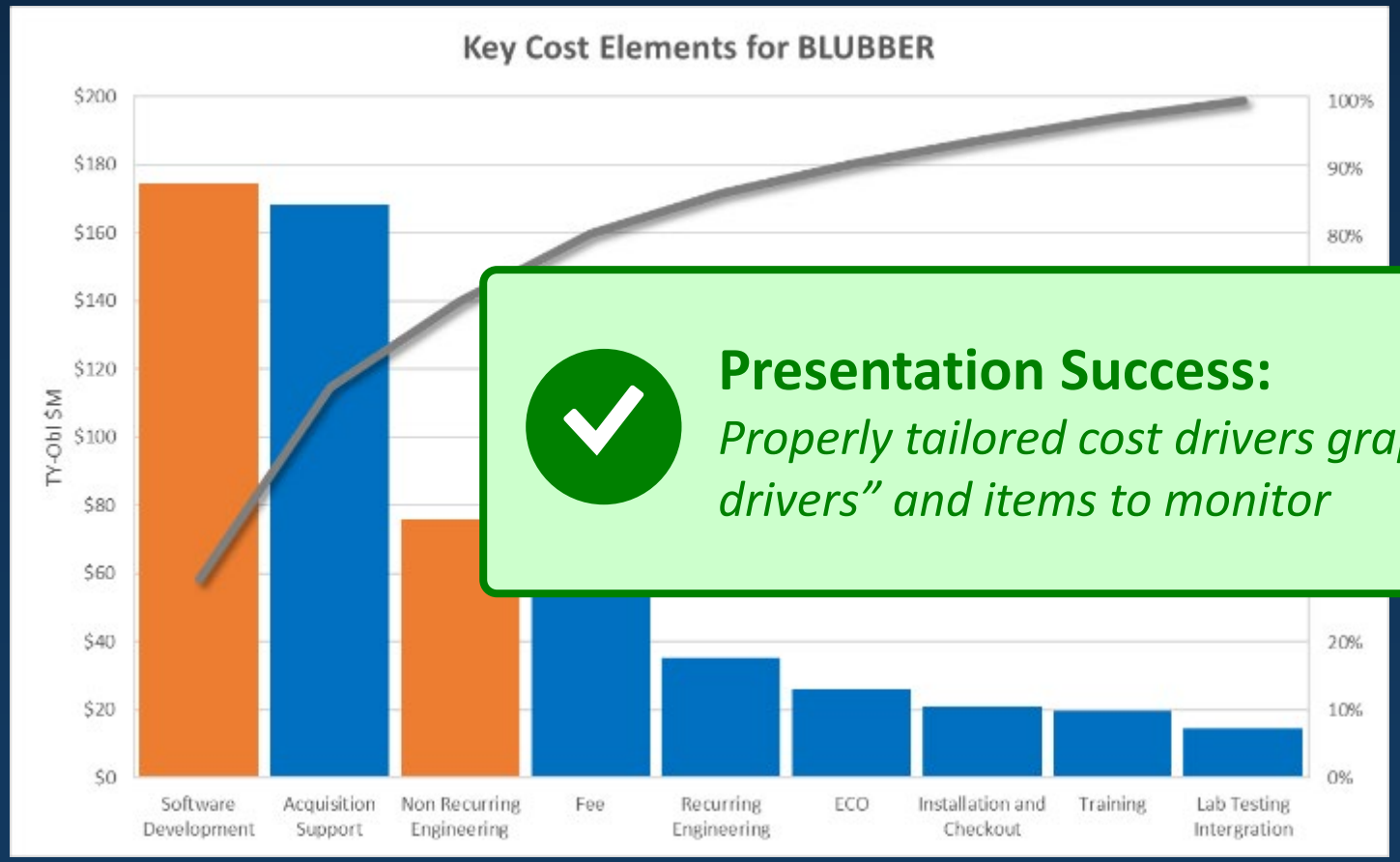
Program Office Estimate (POE) TY$M @Mean	Date of Estimate: 14-Mar-24
Engineering & Manufacturing Development (EMD)	**Methodology**
Contractor Costs	
Prime Mission Product (PMP)	
Non Recurring Engineering (NRE)	
Sonar Equipment Development	155867 NRE Hours for Sonar Development based on WHALE-TALK Technology Maturity and Risk Reduction (TMRR) Analysis
Communication Protocols	
Linguistic Analysis	
Recurring	
Hardware/Material	
Installation and Checkout (I&CO)	
Software Development (Acoustic, Signal P	
Whale Communication Module	
Underwater Sound Detection	
User Interface	complexity)
Other Contractor Costs	
Acquisition Support (SEPM, System Test & Evaluation, Data)	Proprietary Cost Estimating Relationship (CER), parametric based on extensive database of aquatic historical programs
Lab Testing Intergration	System Integrated Lab (SIL) Setup (fabrication/installation/checkout) based on Marine Melodies Lab/SIL actuals
Training	Operator and Maintainer Training / Trainer Upgrades & Modifications based on Marine Melodies actuals
Fee	12% based on Dolphin Dialects awarded contract
Engineering Change Orders (ECO)	5%: Historical standard
Government Costs	
Government Furnished Equipment	Based on COTS unit pricing
Government Program Office Support	Program Office Assessment of Advisory & Assistance Services (A&AS) personnel required
Government Organizational Support	Communication/Water Testing Requirements analogous to Marine Melodies testing actuals
Withholds/Assessments	Factor of Contractor and Go+G28+B5:G46+B6:G46+B5:G46

Presentation Success:

Medium level of detail providing confidence in estimate due to data sources, considered analogies and methodologies

- *Primary Methodologies based on two key analogous ams of similar Size, , Complexity (Marine dies, Dolphin Dialects)*
- *Recurring Engineering and Software Development requirements driven by the WHALE-TALK Risk Reduction Study Conducted by Aquatics Inc.*

BLUBBER - Key Cost Elements



Presentation Success:
Properly tailored cost drivers graph identifying "true drivers" and items to monitor

Software Development

- *Includes the design, coding, testing, documentation of activities required to integrate BLUBBER architecture into the Maritime platform configuration*
- ***Drivers:** Amount of code reuse, productivity & hourly rates*

les SEPM, Test & Evaluation,
is a function of SW Dev and
ngineering
ration with high-interest
em architecture development

Non-Recurring Engineering

- *NRE hours based on the WHALE-TALK Risk Reduction study*
- ***Drivers:** Complex, customization of COTS components and iterative prototyping. Meeting stringent regulatory maritime standards*

BLUBBER - Cost Track (Prior Estimate VS Current Estimate)

Program Office Estimate (POE) TY-Obs $M @Mean	Prior Estimate (Sep 2021)	Current Estimate (Mar 2024)	Delta (Current - Prior)	Rationale
Engineering & Manufacturing Development (EMD)	**$476.85**	**$681.22**	**$204.37**	
Contractor Costs	**$412.39**	**$589.12**	**$176.74**	
Prime Mission Product (PMP)	$213.71	$305.30	$91.59	
Non Recurring Engineering (NRE)	$75.81	$75.81	$0.00	No Change, hours remained the same. HW NRE Hours 473837 hrs based on WHALE-TALK TMRR Analysis
Recurring (Hardware/Material)	$24.59	$35.13	$10.54	Updated methodology based on Marine Melodies HW material cost to Sonar/Communication Interface Cost based on COTS unit pricing
Installation and Checkout (I&CO)	$14.62	$20.89	$6.27	Install Hours per LRU based on Marine Melodies actuals
Software Development (Acoustic, Signal P				HALE-TALK TMRR Analysis. Updated SW growth to
Acquisition Support (SEPM, Test & Evalua				ted escalation index
Lab Testing Integration				lies actuals
Training				es actuals
Fee				
Engineering Change Orders (ECO)				
Government Costs				
Government Furnished Equipment				
Government Program Office Support				
Government Organizational Support				
Withholds/Assessments	$24.78	$35.40	$10.62	Factor of contractor and Government costs
Production	**$894.63**	**$0.00**	**($894.63)**	**BLUBBER Program Office will only be paying for Research & Development, users will be resposible for procuring and sustaining post-EMD**
Operations and Sustainment (O&S)	**$601.86**	**$0.00**	**($601.86)**	**BLUBBER Program Office will only be paying for Research & Development, users will be resposible for procuring and sustaining post-EMD**
Total Program	**$1,973.34**	**$681.22**	**-$1,292.12**	

Presentation Success:

Appropriate level of detail to discuss changes from prior approved estimate for PEO level audience

- ***Primary Updates Prior Estimate vs Current Estimate: Hardware / Material Purchases, Software Development, Acquisition Support costs***
- ***Cost increase driven by SW Technical Baseline change – requirement identified for new Applications***

BLUBBER - Estimate Results (Time Phased TY-Obs @Mean)

Funding in TY-Obs $M, @Mean	Total	FY24	FY25	FY26	FY27	FY28	FY29
BLUBBER - Engineering Manufacturing Development (EMD)	**$681.2**	**$90.2**	**$162.8**	**$152.1**	**$135.1**	**$98.7**	**$42.2**
Contractor Costs	**$589.1**	**$72.4**	**$148.2**	**$135.0**	**$118.7**	**$83.9**	**$30.9**
Prime Mission Product (PMP)	$305.3	$55.1	$88.1	$61.2	$50.0	$36.1	$14.7
Non Recurring Engineering							
Recurring (Hardware/Mate							
Installation and Checkout (							
Software Development (Ac							
Other Contractor Costs							
Acquisition Support (SEPM							
Lab Testing Intergration							
Training							
Fee	$56.9	$7.7	$14.5	$12.8	$11.2	$7.8	$2.9
Engineering Change Orders (ECO)	$25.4	$3.4	$6.5	$5.7	$5.0	$3.5	$1.3
Government Costs	**$92.1**	**$17.8**	**$14.6**	**$17.1**	**$16.5**	**$14.8**	**$11.4**
Government Furnished Equipment	$11.0	$11.0					
Government Program Office Support	$17.7	$1.5	$3.1	$3.2	$3.3	$3.4	$3.2
Government Organizational Support	$27.9		$3.0	$6.1	$6.3	$6.5	$6.1
Withholds/Assessments	$35.4	$5.2	$8.5	$7.7	$6.8	$5.0	$2.2

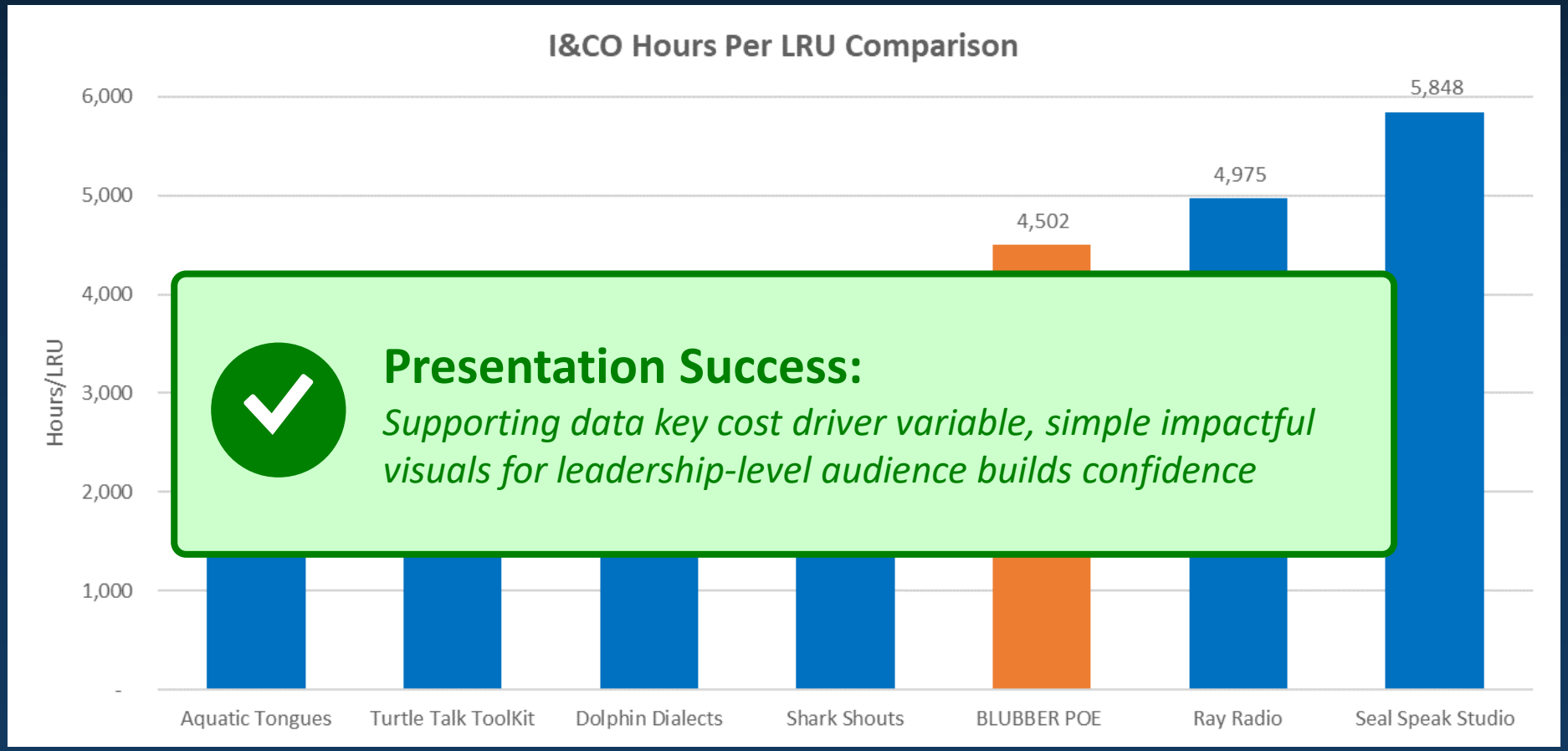
Presentation Success:
Readable table, Appropriate level of detail for audience

Total Investment Program ice Estimate (POE) (TY- s @Mean):

esearch, Development, t & Evaluation (RDT&E) 681.2M

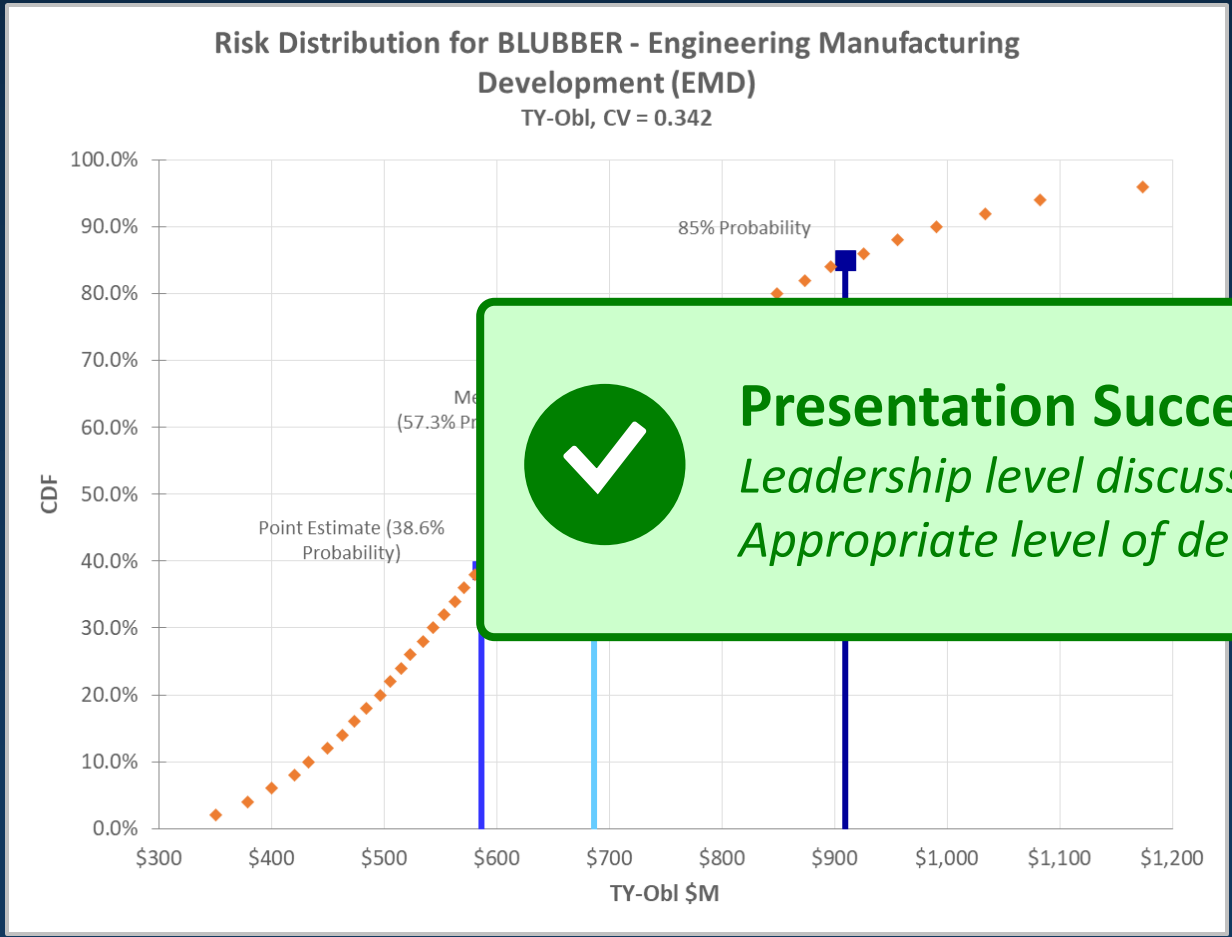
- Contractor Costs = $589.1M
- Government Costs = $92.1M

BLUBBER - Reasonability Check: I&CO per LRU



BLUBBER Installation & Check Out (I&CO) hours per Line Replaceable Unit (LRU) in higher range for existing analogous programs, due to stringent laws surrounding whale interactions and unpredictability of mammal communication behavior

BLUBBER - Risk Distribution



- ***Risk Chart depicts full range of possible outcomes***
  - *Estimate adds $99.5M (17%) risk dollars @Mean compared to point estimate*
  - *High Coefficient of Variation (CV) indicates high-risk program*

ent) contains the most risk
hich incorporates
most components, many
with high reliability, as
o interface with various

Presentation Success:
Leadership level discussion of uncertainty, Appropriate level of detail, Consistent formats

Values	Costs (TY-Obl $M)	Probability
Point Estimate	$586.5	38.6%
Mean	**$686.0**	**57.3%**
85% Probability Level	$909.8	85.0%

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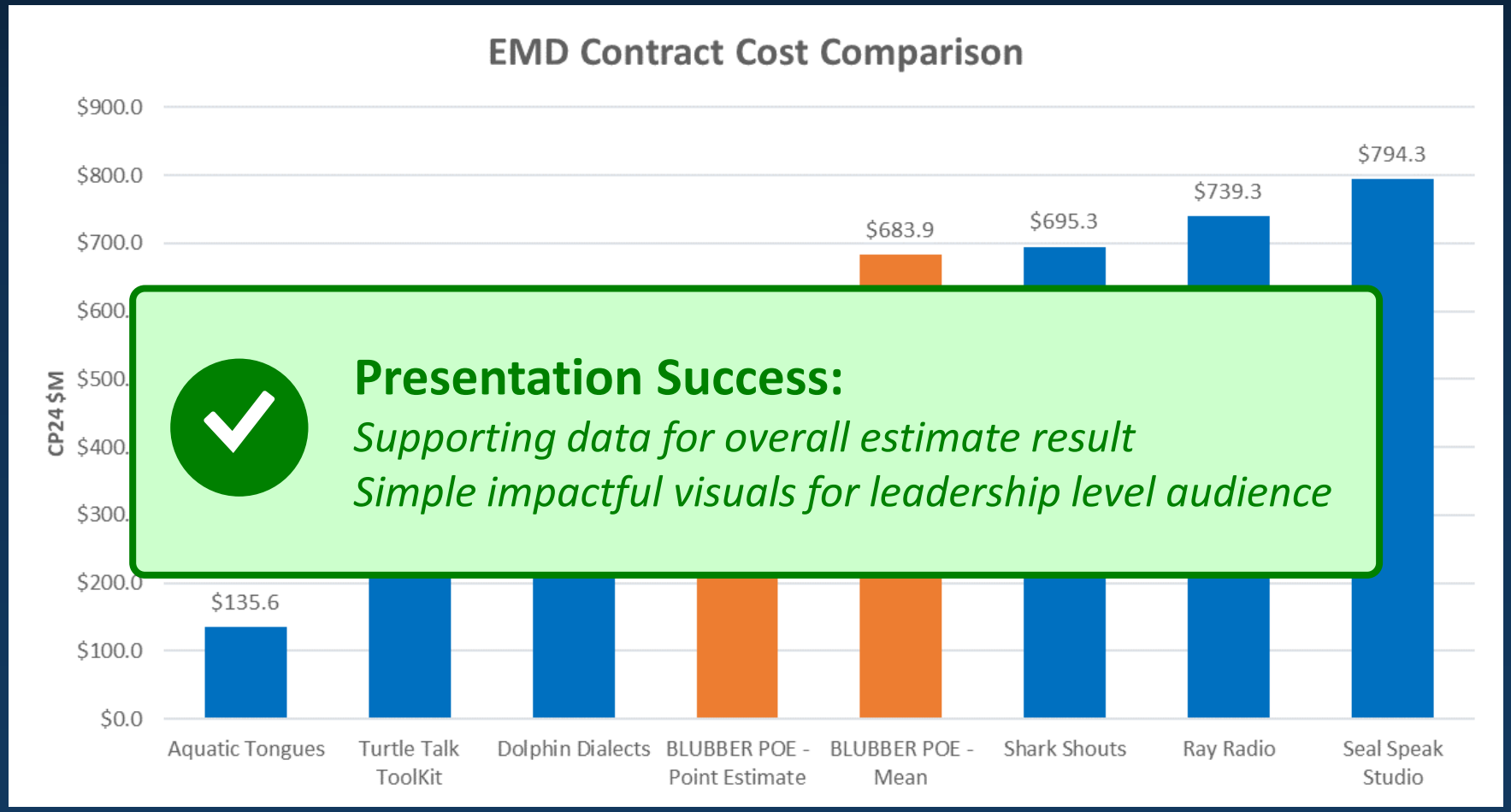
BLUBBER - Reasonability Check: EMD Contract Cost Comparison



Estimated total cost for BLUBBER EMD in range with similar programs - initial estimate was significantly lower, resulting in further review with tech team to identify unrealistic expectations across multiple areas of the program

Program Funding / Budget Availability

Program Funding & Quantities			Acquisition to Cost Ratio					(BY 2024)	Curr Est	D Current	D Original
			Total Req'd Acq (BY24$M):		95.6	92%		PAUC:	95.60		
			Total Req'd O&S (BY24$M):		8.2	8%		APUC:	-		
($ in Millions / Then Year)	Prior	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	To Comp	Prog Total
RDT&E	Primary Line Items:										
Prior $ (FY24 PB)	-	-	-	91.2	162.8	135.0	-	-	-	-	389.0
Current $ (FY25 BES)	-	-	-	91.2	175.3	169.0	-	-	-	-	435.5
Delta $ (Current - Prior)	-	-	-	-	12.5	34.0	-	-	-	-	46.5
Required $	-	-	-	91.2	162.8	152.1	135.1	98.7	42.2	-	682.2
Delta $ (Current - Required)	-	-	-	-	12.5	16.9	(135.1)	(98.7)	(42.2)	-	(246.7)
PROCUREMENT	Primary Line Items:										
Prior $ (FY24 PB)	-										
Current $ (FY25 BES)	-										
Delta $ (Current - Prior)	-										
BP11 Required $	-										
Delta $ (Current - BP11 Required)	-										
SYSTEM O&M	Primary Line Ite										
Prior $ (FY24 PB)	-										
Current $ (FY25 BES)	-										
Delta $ (Current - Prior)	-										
Required[1] $	-										
Delta $ (Current - Required)	-										
TOTAL											
Prior $ (FY24 PB)	-	-	-	91.2	162.8	135.0	-	-	-	-	389.0
Current $ (FY25 BES)	-	-	-	91.2	175.3	169.0	-	-	-	-	435.5
Delta $ (Current - Prior)	-	-	-	-	12.5	34.0	-	-	-	-	46.5
Required $	-	-	-	91.2	162.8	152.1	135.1	98.7	42.2	-	682.2
Delta $ (Current - Required)	-	-	-	-	12.5	16.9	(135.1)	(98.7)	(42.2)	-	(246.7)
QUANTITIES											
Prior Qty (FY24 PB)	0	0	0	0	0	0	0	0	0	0	0
Current Qty (FY25 BES)	0	0	0	0	0	0	1	0	0	0	1
Delta Qty (Current - Prior)	0	0	0	0	0	0	1	0	0	0	1
Required Qty	0	0	0	0	0	0	1	0	0	0	1
Delta Qty (Current - Required)	0	0	0	0	0	0	0	0	0	0	0

Presentation Success:

Inclusion of key information for decision makers

Approved Program Resolution Differences:

- *Approved funding is FY25 Budget Estimate Submission (BES)*
- *Funding Shortfall Mitigation Plans*
- *…00: Fully funded across …25, FY26*
- *…00 Funding Shortfall in …*
- *FY29 disconnect will be funded within the Program Element (PE) and/or the Program Management Office (PMO) will POM for the additional funds*

PM Recommendation to PEO

- Program has adequately defined our requirements, scope, technical baseline, schedule, interdependencies and risks
- Cost estimate presentation clearly defines data sources, considerations made, analysis completed and crosschecks with other known/understood projects
- Government is ready … otiate effectively
- Recommend you imm… eveloping this critical Minimum Viable Product (MVP) for the warfighter

Presentation Success:
Well outlined summary, Clear decision request
Reasonable ask given the rest of presentation content

Questions/Comments

PEO Comments & Decision

- **Commentary:**
  - Happy to see the right functional experts here, dressed professionally and supporting the meeting
  - Concur with the thoughtful requirements definition
  - I am now able to read the schedule presented and to assess key durations/incremental milestones using my historical know
    programs in my portfolio
  - I now see realism regarding technical h
    elements of cost
  - I now understand ho
    risks within our acc
  - I can now see the e
    around, but there w
    HW and SW here folk
  - I appreciate the histor
    in the cost estimate – s
  - I appreciate being able t
    budget chart

- **Recommendations**
  - ***Approve the release of the RFP***

Key Takeaways for a Successful Briefing to the PEO

- ***Estimate is a program product –*** all components must be "ready" to be successful
- ***Ensure the people are invited*** so a decision can be made
- Content on slides should be ***Readable and Consistent***
- ***Simple impactful visualizations*** over complex analytics and graphics
- Identify and summarize key points - ***avoid overwording and technical jargon***
- Think beyond the template - ***consider the audience***
- ***Take a few minutes to review format*** – ensure the slides are visually appealing

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Questions?

Shannon Cardoza, Cost Analyst (SSC/SZYO)
James Monopoli Jr, Cost Technical/Task Lead (SSC/SZQF)
Quantech Services, Inc.
May 2024